



IDAHO DEPARTMENT OF HEALTH & WELFARE

Bureau of Community and Environmental Health

COEUR D'ALENE RIVER BASIN Environmental Health Exposure Assessment - Summary Report

During the summer of 1996, the Idaho Division of Health and the Panhandle Health District conducted a study among residents of the Coeur d'Alene River Basin in northern Idaho. The study investigated exposure to lead and cadmium among people living in an area extending approximately 53 miles from the Idaho/Montana border to near Lake Coeur d'Alene.

Why was this study conducted?

High levels of lead, cadmium, and other metals are present in the Coeur d'Alene River Basin, primarily due to past mining and smelting activities. The region is home to about 11,000 people. About 7,000 people live "in the box" at the Bunker Hill Superfund site (i.e., the 21 square mile area surrounding the former smelting complex) and 4,000 live "outside the box." Studies have been done in the past to see whether people living "in the box" were exposed to lead and other metals in the environment. This study looked at lead and cadmium exposure among people living "outside the box," because previous studies did not look at this population.

What was the purpose?

To find out if people living "outside the box" in the Coeur d'Alene River Basin have been exposed to lead and cadmium; and, if exposure was found, to see what factors (in people's homes and at work, as well as hobbies and other activities) may explain high levels of lead and cadmium.

Who participated?

Study participants included both adults and children living in 843 households located "outside the box" in the Coeur d'Alene River Basin.

What information was collected?

- Questionnaires were used to collect information about households as well as individuals living in the households. This information showed how people may have been exposed to lead and cadmium in their homes and through their work, hobbies, and other activities.
- Samples of blood and urine from study participants were analyzed to determine lead and cadmium levels in their bodies.
- Samples of yard soil, well water, and/or house dust were collected at homes to find possible sources and levels of lead and cadmium. House paint was also tested to determine if there was a lead-based paint hazard.

What were the results?

The main findings of the study were:

- Among 765 people who provided a blood sample, 50 people (6.5% of the total) had an elevated blood lead level (≥ 10 micrograms [mg] of lead per deciliter [dL] of blood).

- Among 160 women aged 14-44 years who participated in the study, only 2 women (1.3%) had an elevated blood lead level (≥ 10 mg/dL), and the highest level was 16 mg/dL.
- Among 47 children under 6 years of age who participated in the study, 7 children (14.9%) had an elevated blood lead level (≥ 10 mg/dL).
- Among 51 children 6 through 9 years of age who participated in the study, 8 children (15.7%) had an elevated blood lead level (≥ 10 mg/dL).
- High levels of cadmium were found mainly in people 50 years of age or older who were smokers or lived with a smoker.

How were the people in the study exposed to lead and cadmium?

The study found that:

- Yard soil and household dust were the main sources of lead exposure among people participating in the study.
- The two main risk factors for having a high level of lead in the blood were: (1) contact with yard soil or household dust that contains lead and (2) recently working in mining and milling activities.
- A high level of cadmium appeared to be related to someone smoking in the household. People who lived with a smoker were 6 times more likely to have a high cadmium level in their urine than people who did not live with a smoker.

Recommendations for public health agencies and educators

- Provide or improve access to grassy or other covered play areas for children;
- Provide the public with information on ways to prevent or reduce sources of and exposure to lead and other metals;
- Offer a yearly blood lead screening for children 9 years old or younger;
- Monitor exposure to lead among people working in mining and milling; and
- Encourage people not to smoke.

Recommendations for community members

- Have your children play on grassy or other covered areas rather than on bare dirt;
- Wash children's toys, bottles, blankets, and pacifiers if they have been in contact with dust or dirt;
- Children 9 years old or younger should participate in the yearly blood lead screening program;
- Keep your house as dust free as possible;
- Ask people to remove their shoes before entering your house, especially if they have been walking on dirt or in dusty areas;
- Always wash your hands before eating, and remind others to do the same;
- Keep furry pets outside the house;
- Don't smoke.

For more information

Contact the Panhandle Health District in Kellogg at (208) 783-0707, or

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